2010

City of Commerce
Water Efficient Landscape Ordinance
Policy Guidelines

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Preface

The City of Commerce recognizes the importance of water efficiency as a critical component of providing reliable water supplies to our community. The State of California determined that the waters of the State are of limited supply and are subject to ever increasing demands. Since the continuation of California's economic prosperity is dependent upon the availability of adequate water supplies for future uses, the State adopted Assembly Bill 1881 to promote the conservation and efficient use of water.

Landscapes are essential to the quality of life in California by providing areas for active and passive recreation and as an enhancement to the environment by cleaning air and water, preventing erosion, offering fire protection, and replacing ecosystems lost to development. Landscape design, installation, maintenance, and management can and should be water efficient.

Consistent with AB 1881, the purpose of this Water Efficient Landscape Ordinance is to:

- Promote the values and benefits of landscapes while recognizing the need to protect water and other resources as possible;
- Establish a structure for planning, designing, installing, maintaining and managing water efficient landscapes in qualifying new construction and rehabilitated projects;
- Establish provisions for water management practices and water waste prevention for existing landscapes;
- Use water efficiently without waste by setting a Maximum Applied Water Allowance as an upper limit for water use and reduce water use to the lowest practical amount;
- Promote the benefits of consistent landscape ordinances with neighboring local and regional agencies;
- Encourage water purveyors to use economic incentives that promote the efficient use of water, such as implementing a tiered-rate structure; and
- To designate the necessary authority to implement and enforce the provisions of the City of Commerce's Water Efficient Landscape Ordinance.

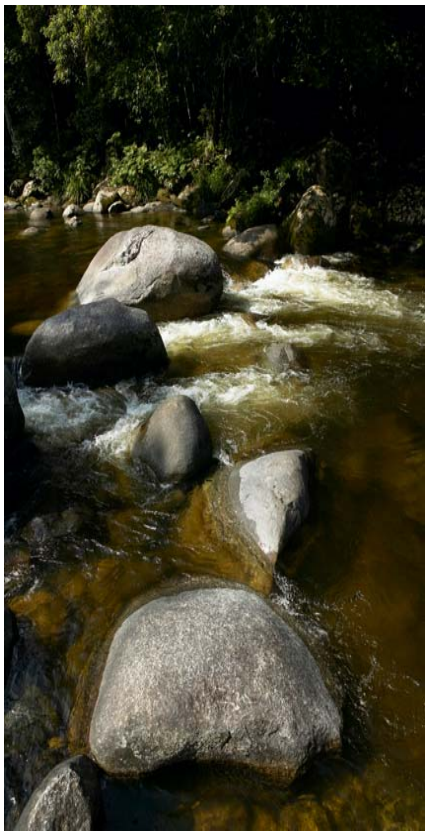
Section 1. **Title**. This Ordinance shall be known as the "City of Commerce Water Efficient Landscape Ordinance."

Section 2. **Purpose and Intent**. The purpose of the City of Commerce Water Efficient Landscape Ordinance is to:

1. Be at least as effective in conserving water as the State of California Model Water Efficient Landscape Ordinance;
2. Assure beneficial, efficient, and responsible use of water resources for all customers/users within Commerce;
3. Retain the land's natural hydrological role within the Los Angeles River Watershed and promote the infiltration of surface water into the groundwater in the Los Angeles Basin;
4. Acknowledge that landscape water use accounts for more than 60% of all domestic water use in the Los Angeles Basin;
5. Recognize that landscapes enhance the aesthetic appearance of developments and the community;
6. Encourage that appropriate design, installation, maintenance, and management of landscapes so to decrease water demand, runoff, and flooding without declining the quality or quantity of landscaped areas;
7. Preserve existing natural vegetation and the incorporation of native plants, plant communities and ecosystems into landscape design where possible;
8. Promote and encourage the use of low water use plants;
9. Minimize the use of cool season turf;
10. Promote conservation of potable water by maximizing the use of recycled water and other water conserving technology for appropriate applications;
11. Promote public education regarding water conservation and efficient water management;
12. Reduce or eliminate water waste.

Section 2 – Purpose & Intent

- Be as effective as the State's Model Ordinance
- Use water wisely and prevent water waste through landscape design elements



Section 3. Applicability

Section 3 – Applicability
- Public/ developer installed landscape projects requiring a permit
- 2,000 sq. ft. homeowner installed landscape projects requiring a permit

A. After January 1, 2010, this ordinance shall apply to all of the following landscape projects:

1. New construction and rehabilitated landscapes for public agency projects and private development projects including industrial, commercial, office, and institutional developments, parks and other public recreational areas, multifamily (5 or more units) residential and PUD common areas requiring a building or landscape permit, plan check or design review;

2. New construction and rehabilitated landscapes which are developer-installed residential projects requiring a building or landscape permit, plan check or design review;

3. New construction which are homeowner-installed residential projects with a total project net landscape area equal to or greater than 2,000 square feet requiring a building or landscape permit, plan check or design review;

4. Existing landscaping that is one acre or more with a dedicated or mixed use water meter are limited to preparing a water efficient landscape worksheet according to the specifications for existing landscapes in the Landscape Documentation packet.

5. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries shall prepare a water efficient landscape worksheet, landscape and irrigation maintenance schedule, and irrigation audit, survey and water use analysis. Existing cemeteries are limited to preparing a water efficient landscape worksheet according to the specifications for existing landscapes in the Landscape Documentation packet.

   Special Landscaped Areas, such as areas dedicated to edible plants, irrigated with recycled water or dedicated to active play, shall prepare a water efficient landscape worksheet and landscape documentation package according to the specifications for Special Landscaped areas.

This ordinance does not apply to:

1. Registered local, state or federal historical sites;
2. Ecological restoration projects that do not require a permanent irrigation system;
3. Mined-land reclamation projects that do not require a permanent irrigation system; or
4. Botanical gardens and arboretums open to the public.

Section 4. Landscape Design and Plant Requirements

A landscape documentation package prepared by a licensed landscape architect shall include the following landscape design criteria:

A. Plant Selection and Grouping

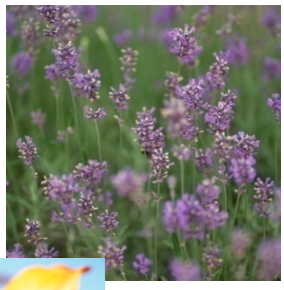
1. Any plant may be used in the landscape, providing the EAWU (estimated annual applied water use) does not exceed the MAWA (maximum annual applied water allowance) and that the plants meet the specifications set forth in 2-4 below.
2. Plants having similar water needs shall be grouped together in distinct hydrozones.
3. Plants shall be selected appropriately based upon their adaptability to the climate, geologic, and topographical conditions of the site. Protection and preservation of existing native species and natural areas is encouraged. The planting of appropriate trees is encouraged.
4. Minimum use of turf. Turf areas shall be used wisely in response to functional needs and shall not exceed the MAWA. Where turf is installed the use of warm season turf is strongly encouraged.
5. Fire prevention needs shall be addressed in areas that are fire prone. Design should be consistent with regulations from the fire department.
6. Invasive species of plants should be avoided especially near parks, buffers, greenbelts, water bodies, and open spaces because of their potential to cause harm in sensitive areas.
7. Encourage the appropriate use of mulch within developed landscapes to retain moisture.

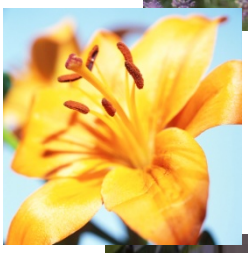
B. Water Features

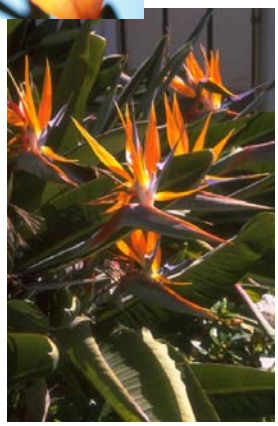
1. Recirculating water systems shall be used for decorative water features.
2. Where available, recycled water shall be used as the source for water features (excluding swimming pools and spas).
3. The surface area of a water feature will be included in the MAWA calculation with the evaporation rate equivalent to that of a high water use plant.

Section 4 – Landscape Design & Plant Requirements

- Set a water budget for each landscape and select plant materials that stay within the water budget
- Minimize the use of turf-grasses
- Promote the use of California friendly® plants







Section 5. Irrigation Requirements

Section 5 – Irrigation Requirements

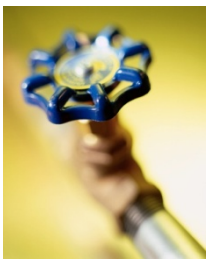
- Incorporate efficient irrigation design into the landscape design so that the landscape remains within budget
- Install a dedicated landscape meter for landscaped areas over 5,000 sq. ft.
- Mandates the installation of a smart irrigation controller which can automatically adjust irrigation scheduling based on weather

A. All irrigation systems shall be designed to prevent runoff, over-spray, low head drainage and other similar conditions. Soil types and infiltration rates shall be considered when designing irrigation systems. Irrigation systems shall be designed, constructed, managed, and maintained to achieve as high an overall efficiency as possible with a precipitation rate not to exceed 0.75 inches per hour.

B. Dedicated (separate) landscape water meters shall be installed for all projects greater than 5,000 sq. ft., except for single family residences (authority cited: Statutes of 2006, AB 1881, Chapter 559, Article 44.5, Section 535). Dedicated landscape water meters are highly recommended on landscape areas over 5,000 sq. ft. to facilitate water management.

C. All irrigation systems shall include:

1. A SMART irrigation controller or other equivalent technology which automatically adjusts the frequency and/or duration of irrigation events in response to changing weather conditions shall be required. The planting areas shall be grouped and irrigated in relation to hydrozones based on similarity of water requirements (i.e. turf separate from shrub and groundcover, full sun exposure areas separate from shade areas; top of slope separate from toe of slope);
2. Anti-drain check valves shall be installed to prevent low-head drainage in sprinkler heads;
3. A pressure regulator when the static water pressure exceeds the maximum recommended operating pressure of the irrigation system; and
4. A rain sensor with an automatic rain shut-off feature shall be required.



Section 6. Soil and Grading Requirements

A. Soil testing shall be performed and submitted with plan check submittals, prior to landscape installation to ensure the selection of appropriate plant material that is suitable for the site and reported in a soil management plan. The soil management plan shall include:

1. Determination of soil texture, indicating the available water holding capacity; agricultural suitability;

2. An appropriate soil infiltration rate either measured or derived from soil texture/infiltration rate tables. A range of infiltration rates shall be noted where appropriate;

3. Measurement of pH and total soluble salts; and

4. Recommended amendments.

B. No soil test shall be required if the soil type can be determined by reference to the City soil map maintained by the Community Development Director and the soil is amended as required by the Director, provided, however a soils test shall be required if substantial amounts of soil are imported to the property.

C. Grading on site shall be designed to minimize unnecessary soil compaction, erosion and water waste. Grade with the intent of retaining all irrigation and rainfall within the property lines and preventing sheet flow on to impermeable hardscapes. Grading plans must satisfy the city/county grading ordinances and be submitted as part of the landscape documentation package.

Section 6 – Soil Requirements

- Requires soil testing so that it can be taken into account when selecting irrigation run-times
- Minimization of compaction and grading to encourage water infiltration

Section 7 – Implementation, Compliance & Enforcement

- Designed to closely follow the City's current permitting procedures
- Projects must submit a completed Landscape Documentation Packet:
  - simple concept drawing of plant and irrigation design
  - includes a plant list, soil plan, and irrigation schedule
  - construction "as-built" drawings reviewed and signed by a landscape architect

Section 7. Implementation

A. Applicants subject to the requirements of the Landscape Ordinance shall submit a complete Landscape Documentation Packet to the Planning Division with a permit application. All applications and plans shall conform to the plant, irrigation, and water budget formula requirements set forth in this Ordinance and the Landscape Documentation Packet.

1. Landscape Concept Plan shall include:

   a. Design statement, irrigation notes, planting notes and a conceptual plant palette identifying proposed hydrozones;
   b. MAWA calculation for the landscape project area.

2. Landscape Construction Drawings

   All applications subject to the requirements of this Ordinance shall include landscape construction drawings that comply with the design standards and specifications contained in the Ordinance. The construction drawings shall be in compliance with the Landscape Concept Plan.

   All landscape construction drawings shall include an irrigation plan, a planting and soils plan, and a water management plan with detailed notes and legends necessary for a complete landscape plan review.

   If the construction drawings differ significantly from the Landscape Concept Plan, as determined by the Administrator, the applicant must resubmit an overall water budget calculation in accordance with the Landscape Documentation Packet.

   a. Irrigation Plan

      The Irrigation Plan shall be a separate document from the Planting Plan. The Irrigation Plan shall be prepared in accordance with the requirements of the Ordinance and include pressure calculations and the location, installation details, and specifications of control valves, irrigation heads, piping, irrigation controllers, and power supply.

b. Planting and Soils Plan

The Planting Plan shall include, but not be limited to:

1. A description of any existing plant material to be retained or removed.
2. A plan showing the planting areas and hydrozones, plant spacing, plant location and size, natural features, water features and all paved areas.
3. A legend listing the common botanical plant names and total quantities by container size and species.
4. A description of the seed mixes with application rates and relevant germination specifications.
5. Soil management plan, including the soil test results and recommendations.
6. The grading plan shall be submitted for reference.

c. Water Management Plan

A Water Management Plan shall be prepared in accordance with the requirements of the Ordinance. The Plan shall include:

1. An introduction and statement of site conditions as described above or a Landscape Concept Plan.
2. Identification of the party(ies) responsible for implementation of the Water Management Plan.
3. The anticipated water requirements in inches per year and water budget for the various hydrozones identified in the landscape concept plan to include calculations demonstrating an overall water budget that requires no more irrigation than the 0.7 of the ET adjustment factor.
4. A description of the water delivery systems, including the type of irrigation system to be used; water conservation methods to be applied, and precipitation rates for each hydrozone.
5. Seasonal irrigation water schedules or procedures for programming of proposed SMART controllers.
6. A maintenance plan for the ongoing operation and maintenance of the irrigation system.
7. All applications for model homes shall include the nature of public information documents and signage that will be placed at model homes

Section 7 – Implementation, Compliance & Enforcement (*continued*)

- A certificate of completion must be submitted by the applicant to the local agencies designated Administrator or designee prior to issuing a certificate of occupancy (consistent with current plan check procedures)
- Administrator may inspect projects before, during, and immediately after installation to verify that project is in compliance
- A copy of the completed packet will be given to the water agency. If the site is found to go over their water budget, they will be subject to a water audit

describing water conservation principles used in landscaping the model home.

B. Compliance/Enforcement

The Administrator or designee shall have the duty and authority to administer and enforce this ordinance. A qualifying project is subject to the following review and approval process prior to issuance of a building permit:

a. Prior to issuance of a permit, a complete Landscape Documentation Packet prepared by an independent licensed landscape architect shall be submitted to the Administrator for review and approval. The licensed landscape architect shall ensure that all components of the package adhere to the requirements of this Ordinance. Any documentation packets submitted without the signature of a licensed landscape architect shall not be accepted for review.

1. Prior to issuance of a certificate of occupancy or final inspection for a project subject to this Ordinance, a Certificate of Completion shall be submitted to the Administrator certifying that the landscaping has been completed in accordance with the approved Planting and Irrigation Plans for the project. The Certificate of Completion shall be signed by a licensed architect and shall indicate that:

   a. The landscaping has been installed in conformance with the approved Planting and Irrigation Plans;
   b. The SMART irrigation controller has been set according to the irrigation schedule;
   c. The irrigation system has been adjusted to maximize irrigation efficiency and eliminate overspray and runoff; and
   d. A copy of the irrigation schedule has been given to the property owner.

2. Upon notice of the applicant, the Administrator shall have the right to enter the project site to conduct inspections for the purpose of enforcing this Ordinance before, during and

immediately after installation of the landscaping.

3. A copy of the completed Landscape Documentation Packet shall be given to the appropriate water agency. If the property is found to be in excess of their established MAWA, the property shall be subject to a landscape water audit.

Section 8. Recycled Water

Section 8 – Recycled Water
- Recycled water shall be used when available

The following may apply in the future if and when the City determines that recycled water is available:

A. The installation of recycled water irrigation systems (i.e. dual distribution systems) shall be required to allow for the current and future use of recycled water, unless a written exemption has been granted stating that recycled water will not be available in the foreseeable future.

B. Irrigation systems shall make use of recycled water unless a written exemption has been granted stating that recycled water meeting all public health codes and standards is not available and will not be available in the foreseeable future.

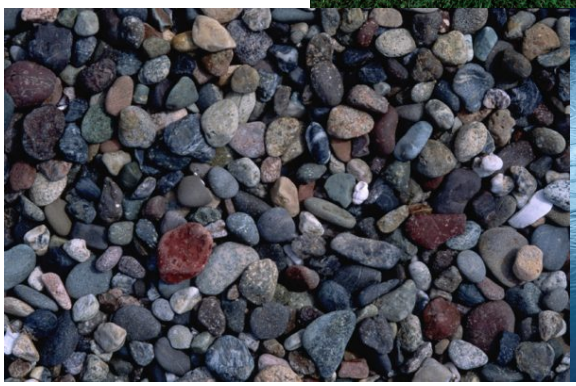
C. The recycled water irrigation systems shall be designed and operated in accordance with all local agency and State codes.

Section 9. Stormwater Management

Section 9 – Stormwater Management
- Stormwater management BMPs are highly recommended onsite

A. Stormwater management combines practices to minimize runoff and water waste to recharge groundwater and to improve water quality. Implementing stormwater best management practices (BMPs) into the landscape, irrigation, and grading design plans to minimize runoff and increase retention and infiltration are highly recommended onsite.

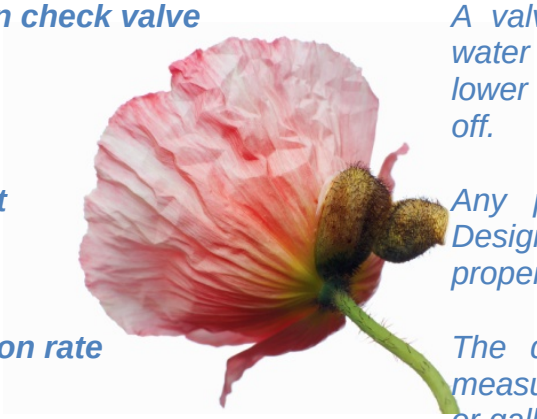
B. Project applicants shall refer to the local agency or Regional Water Quality Control Board for information on any stormwater ordinances and stormwater management plans.



Administrator — *Person at the local agency who has the authority to approve a permit, plan check, and design review for a project.*

Amendments — *Any material added to a soil to improve its physical properties, such as water retention, permeability, water infiltration, and drainage.*

Anti-drain check valve — *A valve located under a sprinkler head to hold water in the system to prevent drainage from the lower elevation sprinkler heads when the system is off.*



Applicant — *Any person required to submit a Landscape Design Application. Applicant may include the property owner or an agent of the owner.*

Application rate — *The depth of water applied to a given area, measured in inches per minute or inches per hour or gallons per hour.*

Applied water — *The portion of water supplied by the irrigation system to the landscape.*

Automatic rain shut-off feature — *A system with a component that automatically suspends the irrigation system event when it rains.*

Botanical gardens and arboretums — *Gardens in which a variety of plants are grown for scientific and educational purposes.*

Certified landscape irrigation auditor — *A person certified to perform landscape irrigation audits by an accredited educational institution or a professional trade organization.*

Control valve — *A device used to control the flow of water in the irrigation system. It may also mean all of the sprinklers or emitters in a line controlled by the valve.*

Controller — *An automatic timing device used to remotely control valves or heads to set an irrigation schedule. A weather-based controller uses evapotranspiration or weather data. A self-adjusting irrigation controller uses sensor data (i.e. soil moisture sensor).*

Developer	*A landowner or owner's agent responsible for the development of land. Does not include homeowners or landlords of single-family homes.*
Discretionary Permit	*Any permit requiring a decision making body to exercise judgment prior to its approval, conditional approval or disapproval.*
Ecological restoration project	*A project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.*
Estimated Annual Applied Water Use or EAWU	*The portion of the Estimated Total Water Use that is derived from applied water (see draft documentation package for formula/calculation). The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance.*
Hydrozone	*A section or zone of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated.*
Infiltration rate	*The rate of water entry into the soil expressed as a depth of water per unit of time (i.e. inches per hour).*
Installation application	*Application to the local jurisdiction for new landscaping or re-landscaping which may include a landscape concept plan and/or landscape construction drawings. The portion of the application submitted with a discretionary permit application will include a landscape concept plan. The ministerial portion of the application will include landscape construction drawings.*
Invasive species	*Non-indigenous species that adversely affect the habitats they invade economically, environmentally or ecologically.*
Irrigation efficiency	*The measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this*

	ordinance is 0.71.
Irrigation system	*The network of piping, valves and irrigation heads.*
Landscape architect	*A person licensed to practice landscape architecture in this state pursuant to Chapter 3.5 commencing with Section 5615 of Division 3 of the Business and Professions Code.*
Landscape concept plan	*The portion of a landscape documentation packet that includes a design statement, irrigation notes, planting notes, the plant palette, and conforms to the requirements of this ordinance. See draft documentation packet for a sample.*
Landscape construction drawings	*The portion of a landscape documentation packet that includes the irrigation plan, plant and soils plan, water management plan, and conforms with the requirements of this ordinance. See draft documentation packet for a sample.*
Landscape documentation packet	*The complete packet of documents required under Sections 4, 5, and 6 to be submitted to the local agency. Documentation packets include the landscape concept plan and landscape construction drawings (irrigation plan, plant and soils plan, and water management plan). See draft documentation packet for a sample.*
Landscape water audit	*An in-depth evaluation of the performance of an irrigation system conducted by a Certified Landscape Irrigation Auditor. Audits include, but are not limited to: inspection, system tune-up, system test with distribution uniformity and verification of minimal overspray or run-off that causes overland flow, preparation of an irrigation schedule.*
Local agency	*The City that is responsible for adopting and implementing the Ordinance. A local agency is the entity responsible for the approval of a permit, plan check, and design review for a project.*
Low-head drainage	*Drainage from a sprinkler that is caused by water flowing down an irrigation system from a higher level of elevation.*

Mulch	*Any organic material such as leaves, bark or inorganic material such as pebbles, stones, gravel, decorative sand or decomposed granite left loose and applied to the soil surface to reduce evaporation.*
Operating pressure	*The pressure, at which an irrigation system of sprinklers is designed by the manufacturer to operate, usually indicated at the base of a sprinkler.*
Overspray	*The water that is delivered beyond the landscaped areas by the irrigation system onto pavements, walks, structures or other non-landscaped areas.*
Planting plan	*Plan submitted with the construction drawings indicating a list and quantity of plants.*
Potable water	*Water meant for human consumption that is treated to legal standards for human consumption.*
Pressure regulator	*A device used in sprinkler systems for radius and high pressure control.*
Project net landscape area, landscaped area or landscape project area 	*All of the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (i.e. open spaces and existing native vegetation).*
Rain sensor	*A system component which detects rainfall and automatically overrides the irrigation system during rain events.*
Recycled water	*Water which, as a result of treating waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource.*
Rehabilitated landscapes	*Any re-landscaped project that requires a permit, plan check or design review and meets the*

	requirements of Section 2.
Runoff	*Water that is not absorbed by the soil or landscape to which it is applied and flows from the area.*
SMART irrigation controller	*Weather-based or soil moisture-based irrigation controller that monitors and uses information about the environmental conditions at a specific location and landscape to automatically adjust watering schedules.*
Soil management plan	*Plan submitted with the construction drawings indicating results from soil tests and recommended soil amendments.*
Soil test	*Test done by a soil test lab that indicates at minimum soil texture, water holding capacity, pH, and soluble salts.*
Soil type	*The classification of soil based on the percentage of its composition of sand, silt, and clay.*
Special landscape area	*Means an area of the landscape dedicated to edible plants, areas irrigated with recycled water, and areas dedicated to active play such as parks, sports fields, golf courses, where turf provides a playing surface.*
Sprinkler head	*A device which delivers water through a nozzle.*
Static water pressure	*The pipeline or municipal water supply pressure when water is not flowing.*
Turf 	*A surface layer of earth containing mowed grass or grass-like sedge with its roots. A groundcover surface of mowed grass or grass-like sedge. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are common cool-season turf. Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, Carex pansa, and Buffalo grass are common warm-season turf.*
Water efficient landscape worksheet	*Worksheet which calculates a site's water budget. See Appendix draft documentation packet for*

	sample.
Water feature	*Any water applied to the landscape for non-irrigation, decorative purposes. Fountains, streams, ponds, lakes, and swimming pools are considered water features.*
Water management plan	*Plan submitted with the construction drawings as part of the landscape documentation packet.*
Water schedules	*Schedule of irrigation times throughout a given year.*
Water-conserving landscape design	*A landscape design developed to conserve water.*